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PRELIMINARY REPORT  
INDUSTRY SERIES

# 1987

## Census of Manufactures

MC87-I-38B(P)  
Issued May 1989

### MEDICAL INSTRUMENTS; OPHTHALMIC GOODS; PHOTOGRAPHIC EQUIPMENT; CLOCKS, WATCHES, AND WATCHCASES

Industries 3841, 3842, 3843, 3844, 3845, 3851, 3861, and 3873

#### INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.<sup>1</sup>

#### INDUSTRY 3841, SURGICAL AND MEDICAL INSTRUMENTS

In the 1987 Census of Manufactures, Industry 3841, Surgical and Medical Instruments, had employment of 73.4 thousand. The employment figure was 29 percent above the 56.9 thousand reported in 1982. Compared with 1986, employment in 1987 increased 17 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

<sup>1</sup>Standard Industrial Classification Manual: 1987. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

The total value of shipments for establishments classified in this industry was \$7.6 billion. The products primary to this industry appear in table 2 and aggregated to \$7.0 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$2.5 billion in 1987. Data on specific materials consumed appear in table 3.

#### INDUSTRY 3842, SURGICAL APPLIANCES AND SUPPLIES

In the 1987 Census of Manufactures, Industry 3842, Surgical Appliances and Supplies, had employment of 78.2 thousand. The employment figure was 14 percent above the 68.8 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was \$8.5 billion. The products primary to this industry appear in table 2 and aggregated to \$8.0 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$3.0 billion in 1987. Data on specific materials consumed appear in table 3.

#### INDUSTRY 3843, DENTAL EQUIPMENT AND SUPPLIES

In the 1987 Census of Manufactures, Industry 3843, Dental Equipment and Supplies, had employment of 14.1 thousand. The employment figure was 9 percent below the 15.5 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was \$1.4 billion. The products primary to this industry appear in table 2 and aggregated to \$1.2 billion in 1987.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call Chad Nelson (301) 763-7304.

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The cost of materials and services used by establishments in this industry amounted to \$518.5 million in 1987. Data on specific materials consumed appear in table 3.

### **INDUSTRY 3844, X-RAY APPARATUS AND TUBES**

In the 1987 Census of Manufactures, Industry 3844, X-ray Apparatus and Tubes, had employment of 9.6 thousand.

The total value of shipments for establishments classified in this industry was \$1.7 billion. The products primary to this industry appear in table 2 and aggregated to \$1.6 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$726.1 million in 1987. Data on specific materials consumed appear in table 3.

### **INDUSTRY 3845, ELECTROMEDICAL EQUIPMENT**

In the 1987 Census of Manufactures, Industry 3845, Electromedical Equipment, had employment of 28.1 thousand.

The total value of shipments for establishments classified in this industry was \$3.5 billion. The products primary to this industry appear in table 2 and aggregated to \$3.4 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$1.2 billion in 1987. Data on specific materials consumed appear in table 3.

### **INDUSTRY 3851, OPHTHALMIC GOODS**

In the 1987 Census of Manufactures, Industry 3851, Ophthalmic Goods, had employment of 23.7 thousand. The employment figure was 8 percent below the 25.8 thousand reported in 1982. Compared with 1986, employment in 1987 increased 9 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was \$1.6 billion. The products primary to this industry appear in table 2 and aggregated to \$1.4 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$500.0 million in 1987. Data on specific materials consumed appear in table 3.

### **INDUSTRY 3861, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES**

In the 1987 Census of Manufactures, Industry 3861, Photographic Equipment and Supplies, had employment of 88.0 thousand. The employment figure was 26 percent

below the 119.3 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 7 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was \$19.4 billion. The products primary to this industry appear in table 2 and aggregated to \$15.6 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to \$6.2 billion in 1987. Data on specific materials consumed appear in table 3.

### **INDUSTRY 3873, WATCHES, CLOCKS, WATCHCASES, AND PARTS**

In the 1987 Census of Manufactures, Industry 3873, Watches, Clocks, Watchcases, and Parts, had employment of 12.7 thousand. The employment figure was 24 percent below the 16.8 thousand reported in 1982. Compared with 1986, employment in 1987 increased 9 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was \$1.0 billion. The products primary to this industry appear in table 2 and aggregated to \$928.0 million in 1987.

The cost of materials and services used by establishments in this industry amounted to \$525.8 million in 1987. Data on specific materials consumed appear in table 3.

### **ABBREVIATIONS AND SYMBOLS**

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.



## CONTACTS FOR DATA USERS

Subject Area	Contact	Phone	Subject Area	Contact	Phone
Census/ASM			Import/Export Publications	Foreign Trade Division	(301) 763-5140
Durables	Kenneth Hansen	(301) 763-7304	Industry Analysis and Forecasts	International Trade Administration	(202) 377-4356
Nondurables	Michael Zampogna	(301) 763-2510			
Current Industrial Reports					
Durables	Malcolm Bernhardt	(301) 763-2518			
Nondurables	Thomas Flood	(301) 763-5911			

# Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix ]

Year <sup>1</sup>	Companies <sup>2</sup> (no.)	All establishments <sup>3</sup>		All employees		Production workers			Value added by manufac- ture <sup>4</sup> (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expendi- tures (million dollars)	End-of- year inventories <sup>4</sup> (million dollars)	Ratios	
		Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Spe- cial- ization (per- cent)	Cover- age (per- cent)
INDUSTRY 3841, SURGICAL AND MEDICAL INSTRUMENTS															
1987 Census	(NA)	1 106	424	73.4	1 775.2	45.6	92.6	844.5	5 077.5	2 501.0	7 560.7	345.5	1 416.1	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	62.6	1 386.2	39.4	79.3	686.8	3 575.2	1 814.7	5 346.8	217.2	1 135.5	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	61.4	1 290.7	39.3	77.8	631.8	3 528.1	1 603.4	5 081.6	202.9	1 060.9	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	61.3	1 215.5	39.7	77.3	601.2	3 155.6	1 529.4	4 629.6	219.1	1 006.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	60.2	1 130.2	40.1	76.6	570.1	2 990.1	1 362.6	4 343.2	191.2	851.5	(NA)	(NA)
1982 Census	766	859	312	56.9	999.5	38.5	74.3	517.5	2 884.8	1 252.5	4 084.5	230.2	847.7	90	81
1981 ASM	(NA)	(NA)	(NA)	54.6	830.6	35.4	65.8	417.4	2 158.0	1 027.8	3 158.2	183.7	612.7	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	51.3	738.7	33.9	62.9	372.7	1 764.1	959.4	2 697.3	163.4	575.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	49.9	628.0	33.6	62.7	340.4	1 539.8	774.1	2 253.5	142.3	493.2	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	45.9	537.5	32.3	63.8	291.8	1 370.4	681.0	2 029.9	75.9	419.9	(NA)	(NA)
1977 Census	575	650	237	43.2	490.7	29.2	57.4	260.9	1 212.2	647.0	1 829.4	85.3	360.3	88	80
1976 ASM	(NA)	(NA)	(NA)	42.8	497.3	27.5	53.1	240.7	1 138.0	679.3	1 799.5	59.5	397.0	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	40.1	430.3	26.1	49.1	206.4	954.3	567.4	1 517.4	83.8	368.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	39.8	393.4	27.7	52.0	199.8	874.6	520.8	1 354.8	79.8	338.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	36.4	305.9	26.1	51.0	173.4	715.6	378.8	1 079.5	60.4	223.7	(NA)	(NA)
1972 Census	449	506	199	34.5	282.4	24.3	48.0	161.1	630.0	347.9	961.8	42.0	203.6	90	82
INDUSTRY 3842, SURGICAL APPLIANCES AND SUPPLIES															
1987 Census	(NA)	1 494	547	78.2	1 774.3	50.4	98.5	858.8	5 542.3	2 957.8	8 472.3	207.2	1 364.5	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	77.7	1 722.7	48.6	93.6	803.9	5 379.6	2 971.6	8 290.8	254.5	1 438.7	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	76.3	1 606.6	49.2	95.3	794.6	4 975.1	2 872.7	7 864.7	348.3	1 350.3	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	73.8	1 441.4	49.5	95.4	743.5	4 422.9	2 760.3	7 116.9	260.9	1 309.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	69.3	1 301.5	45.6	88.0	676.9	3 738.3	2 302.8	6 044.1	180.4	1 184.3	(NA)	(NA)
1982 Census	1 224	1 367	451	68.8	1 211.1	46.1	87.8	633.1	3 450.8	2 233.1	5 667.1	187.7	1 106.7	86	89
1981 ASM	(NA)	(NA)	(NA)	64.9	1 061.8	44.0	85.8	573.6	2 855.0	1 914.3	4 733.9	190.0	860.1	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	61.8	917.6	41.9	79.7	490.3	2 313.2	1 595.2	3 860.5	118.0	766.9	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	58.7	794.3	39.8	76.1	435.1	2 144.5	1 350.9	3 443.4	99.1	666.7	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	58.6	716.9	40.0	75.1	396.8	1 803.5	1 169.3	2 934.4	92.2	562.4	(NA)	(NA)
1977 Census	1 016	1 153	321	53.5	618.8	36.5	69.9	342.4	1 586.4	1 038.9	2 588.2	67.4	503.3	87	85
1976 ASM	(NA)	(NA)	(NA)	52.8	555.4	36.6	68.7	313.5	1 383.4	901.8	2 236.9	76.0	471.0	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	54.3	514.6	38.0	68.5	289.1	1 286.6	805.5	2 089.7	73.8	420.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	50.5	452.7	35.2	66.4	258.6	1 061.7	764.8	1 795.4	56.3	392.8	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	46.0	409.5	31.4	61.0	222.4	1 035.6	625.0	1 615.4	41.6	326.5	(NA)	(NA)
1972 Census	780	872	256	43.9	365.3	29.8	58.1	197.8	929.0	535.2	1 453.5	47.5	265.6	79	90
INDUSTRY 3843, DENTAL EQUIPMENT AND SUPPLIES															
1987 Census	(NA)	490	127	14.1	337.8	8.5	16.3	154.9	876.2	518.5	1 384.2	30.6	258.4	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	14.5	336.3	8.7	16.7	164.8	798.1	531.1	1 317.6	33.5	257.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	14.4	320.7	9.2	17.4	158.5	740.6	508.7	1 256.5	24.4	252.9	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	14.4	290.4	9.3	18.2	144.9	720.3	503.0	1 213.2	29.6	249.6	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.4	271.7	9.0	17.5	124.5	612.9	481.2	1 117.2	15.9	224.8	(NA)	(NA)
1982 Census	438	485	131	15.5	281.3	9.8	18.8	132.0	642.8	473.3	1 111.7	21.6	271.2	95	99
1981 ASM	(NA)	(NA)	(NA)	17.4	290.8	11.4	21.6	141.8	685.6	644.1	1 313.7	19.5	247.1	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	16.7	264.6	11.0	20.9	124.5	613.5	652.6	1 251.5	28.6	232.3	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	16.2	234.6	10.7	20.7	115.6	532.7	558.8	1 079.6	29.2	204.1	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	17.4	225.0	11.2	21.8	116.7	491.6	416.6	909.4	21.5	199.5	(NA)	(NA)
1977 Census	507	550	119	16.3	203.3	10.7	21.2	104.8	458.6	339.7	786.7	16.2	174.1	92	98
1976 ASM	(NA)	(NA)	(NA)	15.3	195.4	10.9	21.6	107.8	435.2	310.9	729.3	17.3	177.2	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	14.6	165.3	10.1	20.0	89.0	380.0	298.4	671.6	12.5	160.8	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	15.1	154.0	11.2	21.1	87.1	380.4	287.6	649.0	14.9	159.9	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	13.5	124.5	9.2	17.6	64.4	282.1	200.3	467.6	14.5	107.7	(NA)	(NA)
1972 Census	385	429	107	12.4	110.0	8.5	16.6	58.3	262.3	159.8	409.2	14.9	91.9	93	94
INDUSTRY 3844, X-RAY APPARATUS AND TUBES <sup>6</sup>															
1987 Census	(NA)	78	46	9.6	283.2	5.7	11.2	140.1	946.2	726.1	1 655.8	36.4	340.4	(NA)	(NA)
INDUSTRY 3845, ELECTROMEDICAL EQUIPMENT <sup>6</sup>															
1987 Census	(NA)	208	133	28.1	820.6	12.7	24.5	253.3	2 311.5	1 181.6	3 452.8	108.9	814.8	(NA)	(NA)
INDUSTRY 3851, OPHTHALMIC GOODS															
1987 Census	(NA)	483	142	23.7	450.6	15.8	31.3	231.3	1 089.7	500.0	1 576.8	73.0	342.5	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	21.7	414.6	14.3	28.6	207.5	933.5	472.2	1 411.2	92.6	335.2	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	24.9	434.0	15.5	31.2	210.1	995.6	412.4	1 418.2	78.6	343.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	25.1	433.0	16.6	33.1	219.8	1 009.1	398.3	1 350.7	63.5	348.8	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	24.1	396.3	15.5	31.1	201.8	930.0	388.4	1 332.4	29.2	313.4	(NA)	(NA)
1982 Census	390	410	122	25.8	408.7	17.1	34.5	212.6	874.2	386.4	1 273.0	41.1	321.7	91	98
1981 ASM	(NA)	(NA)	(NA)	26.4	387.2	18.7	37.3	215.7	862.8	402.1	1 263.2	28.3	302.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	29.4	386.1	20.8	41.3	221.1	839.0	398.6	1 211.9	25.7	303.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	29.1	343.3	21.3	41.8	205.3	757.1	363.4	1 102.7	37.5	269.4	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	31.1	353.8	22.5	44.5	209.7	769.6	376.0	1 132.5	40.6	269.7	(NA)	(NA)
1977 Census	593	634	155	30.0	314.1	21.7	43.1	188.4	656.2	331.1	971.8	44.1	244.9	92	98
1976 ASM	(NA)	(NA)	(NA)	28.1	275.9	21.0	40.2	169.2	588.4	279.7	851.6	27.6	190.6	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	27.0	247.5	20.3	38.7	157.3	477.9	254.5	752.8	14.9	173.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	28.6	228.8	22.2	43.0	164.3	494.8	240.5	717.3	14.0	202.2	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	26.7	203.8	21.2	41.4	132.0	459.3	202.5	627.1	24.8	170.5	(NA)	(NA)
1972 Census	445	499	125	26.6	183.4	20.5	39.8	129.9	416.3	180.1	568.3	17.4	160.0	87	96
INDUSTRY 3861, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES															
1987 Census	(NA)	779	282	88.0	2 879.7	44.6	91.7	1 217.8	13 075.1	6 237.6	19 398.5	682.0	2 441.3	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	94.6	2 870.2	47.6	95.0	1 235.0	12 335.9	6 110.5	18 580.4	697.0	2 480.4	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	98.5	3 128.8	50.2	100.4	1 377.3	12 257.4	5 890.1	18 114.4	834.2	2 673.1	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	104.0</											



**Table 1. Historical Statistics for the Industry: 1987 and Earlier Years—Con.**

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year <sup>1</sup>	Companies <sup>2</sup> (no.)	All establishments <sup>3</sup>		All employees		Production workers			Value added by manufac- ture <sup>4</sup> (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expend- itures (million dollars)	End-of- year inventories <sup>4</sup> (million dollars)	Ratios	
		Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Special- ization (per- cent)	Cover- age (per- cent)
INDUSTRY 3861, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES—Con.															
1982 Census	723	795	286	119.3	3 193.1	64.1	123.7	1 457.2	10 859.5	5 859.7	17 037.5	752.6	2 601.4	94	97
1981 ASM	(NA)	(NA)	(NA)	114.2	2 888.0	62.7	124.4	1 331.9	11 199.2	5 902.3	16 927.3	771.9	2 386.1	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	114.2	2 559.6	62.6	122.3	1 165.9	9 930.8	6 199.8	15 867.0	578.2	2 228.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	114.1	2 303.2	64.6	123.8	1 069.1	8 812.6	4 698.5	13 410.2	475.6	1 879.9	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	112.0	2 072.3	64.3	123.1	984.8	7 837.8	3 747.5	11 535.9	354.6	1 628.5	(NA)	(NA)
1977 Census	700	778	263	111.6	1 897.9	61.6	119.2	885.1	6 728.8	3 236.0	9 933.2	322.7	1 501.1	95	95
1976 ASM	(NA)	(NA)	(NA)	107.3	1 732.0	58.3	112.8	780.0	6 077.4	2 914.7	8 844.5	347.0	1 429.2	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	99.9	1 441.4	53.8	101.6	649.9	5 177.0	2 443.4	7 627.0	387.8	1 199.9	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	108.6	1 429.4	62.1	120.3	677.3	5 075.0	2 565.5	7 493.4	410.6	1 238.7	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	101.1	1 235.4	58.4	110.7	594.9	4 735.6	1 821.3	6 435.0	278.5	939.2	(NA)	(NA)
1972 Census	554	627	225	96.0	1 119.7	56.0	107.0	545.8	4 087.9	1 487.9	5 623.9	202.9	751.1	95	96
INDUSTRY 3873, WATCHES, CLOCKS, WATCHCASES, AND PARTS															
1987 Census	(NA)	217	76	12.7	228.2	9.8	19.2	142.5	490.7	525.8	1 014.2	24.0	217.7	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	11.6	222.7	8.5	16.8	127.9	509.7	635.8	1 147.6	<sup>\$</sup> 28.6	228.7	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	11.8	210.4	8.7	17.1	126.6	418.6	485.4	912.1	<sup>\$</sup> 15.8	204.8	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.4	223.7	10.3	19.7	139.2	531.5	573.9	1 094.6	12.1	235.7	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.6	227.3	10.7	20.1	138.1	433.4	582.2	1 068.2	15.4	233.7	(NA)	(NA)
1982 Census	227	237	87	16.8	248.1	12.3	22.4	150.2	483.5	688.2	1 187.6	14.6	281.0	95	93
1981 ASM	(NA)	(NA)	(NA)	20.5	296.5	15.2	29.2	177.7	627.7	804.1	1 417.7	17.4	313.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	23.0	290.6	17.3	33.0	180.6	663.5	880.9	1 511.6	17.6	313.4	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	27.4	309.3	21.0	40.3	197.4	672.2	930.2	1 592.0	23.6	299.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	34.9	376.3	26.8	53.1	233.1	788.0	1 040.2	1 802.9	<sup>\$</sup> 40.9	328.6	(NA)	(NA)
1977 Census	283	302	112	31.5	316.6	24.0	46.3	199.4	684.5	912.4	1 594.7	23.2	271.7	91	95
1976 ASM	(NA)	(NA)	(NA)	33.1	317.6	25.8	49.5	204.8	743.4	785.1	1 512.8	26.1	278.4	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	32.1	287.3	24.6	47.1	178.7	580.3	613.3	1 212.5	16.1	254.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	35.3	292.2	28.2	53.5	193.4	585.6	577.2	1 153.7	17.0	280.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	33.5	259.4	27.1	52.3	174.6	546.1	538.1	1 053.3	21.6	235.9	(NA)	(NA)
1972 Census	184	202	99	30.8	230.3	24.7	47.6	153.8	466.0	482.0	937.2	18.8	187.1	92	94

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 3841, 12%; SIC 3842, 19%; SIC 3843, 12%; SIC 3844, 5%; SIC 3845, 8%; SIC 3851, 18%; SIC 3861, 5%; and SIC 3873, 17%.

<sup>1</sup>In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

<sup>2</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during year.

<sup>4</sup>Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

<sup>5</sup>Estimates for new capital expenditures have associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

<sup>6</sup>Industry definition is new for 1987 Census of Manufactures. An explanation of the Standard Industrial Classification revision will appear in the final industry series text that supercedes this report.

**Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
<b>3841--</b>	<b>SURGICAL AND MEDICAL INSTRUMENTS</b>						
	Total	(NA)	(X)	6 968.3	(NA)	(X)	4 271.9
38411 --	Surgical and medical instruments and apparatus	(NA)	(X)	5 759.7	(NA)	(X)	3 686.1
38411 12	Surgical instruments, including suture needles, and eye, ear, nose, and throat instruments	(NA)	(X)	701.3	57	(X)	669.4
38411 31	Orthopedic instruments, excluding eye, ear, nose, and throat instruments	(NA)	(X)	125.8	20	(X)	92.8
38411 21	Diagnostic apparatus:	(NA)	(X)	138.2	17	(X)	79.7
38411 22	Metabolism and blood-pressure apparatus	(NA)	(X)	138.2	17	(X)	79.7
	Optical diagnostic apparatus (those incorporating an optical lens or mirror)	(NA)	(NA)	330.1	13	(S)	56.1
38411 24	Other diagnostic apparatus	(NA)	(NA)	330.1	55	(X)	255.8
38411 42	Syringes	(NA)	(X)	583.6	9	(S)	312.7
38411 49	Hypodermic needles	(NA)	(X)	175.6	10	(S)	95.5
38411 72	Anesthesia apparatus and instruments	(NA)	(X)	270.0	(NA)	(X)	385.2
38411 76	Oxygen tents	(NA)	(X)	12.5	6	(X)	14.9
38411 81	Veterinary instruments	(NA)	(X)	6.8	6	(X)	7.6

See footnotes at end of table.

**Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
<b>3841- --</b>	<b>SURGICAL AND MEDICAL INSTRUMENTS—Con.</b>						
38411 --	Surgical and medical instruments and apparatus—Con.						
38411 85	Blood transfusion, IV equipment, and donor kits .....	(NA)	(X)	400.0	30	(X)	533.3
38411 86	Catheters .....	(NA)	(X)	956.0	35	(X)	476.5
38411 87	Mechanical therapy appliances .....	(NA)	(X)	74.6	(NA)	(X)	237.4
38411 97	Other surgical and medical instruments .....	(NA)	(X)	1 417.2	(NA)	(X)	896.4
38411 99	Parts for surgical and medical instruments and apparatus .....	(NA)	(X)	326.4	(NA)	(X)	( <sup>1</sup> 4)
38411 00	Surgical and medical instruments and apparatus, n.s.k. ....	(NA)	(X)	241.4	(NA)	(X)	72.8
38412 --	Hospital furniture .....	(NA)	(X)	430.6	(NA)	(X)	270.0
38412 91	Operating room furniture, including tables, cases, cabinets, etc. ....	(NA)	(X)	87.9	14	(X)	55.9
38412 93	Patient room furniture, including cabinets, overbed tables, desks, dressers, etc., but excluding beds and chairs .....	(NA)	(X)	100.6	19	(X)	74.1
38412 96	Other hospital furniture, excluding operating and patient room furniture, beds, and instruments, but including cases, tables, bassinets, chart racks, back rests, etc. ....	(NA)	(X)	228.3	40	(X)	138.0
38412 00	Hospital furniture, n.s.k. ....	(NA)	(X)	13.9	(NA)	(X)	2.0
38410 --	Surgical and medical instruments, n.s.k. ....	(NA)	(X)	778.0	(NA)	(X)	315.8
38410 00	Surgical and medical instruments, n.s.k., typically for establishments with 10 employees or more (see note) .....	(NA)	(X)	499.5	(NA)	(X)	216.5
38410 02	Surgical and medical instruments, n.s.k., typically for establishments with less than 10 employees (see note) .....	(NA)	(X)	278.5	(NA)	(X)	99.3
<b>3842- --</b>	<b>SURGICAL APPLIANCES AND SUPPLIES</b>						
	<b>Total .....</b>	<b>(NA)</b>	<b>(X)</b>	<b>8 004.3</b>	<b>(NA)</b>	<b>(X)</b>	<b>5 018.8</b>
38421 --	Surgical, orthopedic, prosthetic, and therapeutic appliances and supplies .....	(NA)	(X)	5 664.2	(NA)	(X)	3 785.7
	Artificial joints and other orthopedic or fracture appliances and prosthetic appliances:						
38421 01	Artificial joints .....	(NA)	(X)	513.6	(NA)	(X)	( <sup>5</sup> )
38421 02	Artificial limbs .....	(NA)	(X)	38.0	(NA)	(X)	<sup>6</sup> 218.7
38421 03	Bone plates, screws, and nails, and other internal fixation devices or appliances .....	(NA)	(X)	66.8	(NA)	(X)	( <sup>5</sup> )
38421 04	Braces, mechanical .....	(NA)	(X)	45.0	(NA)	(X)	<sup>6</sup> 105.2
38421 05	Elastic braces, suspensories, and other elastic supports .....	(NA)	(X)	94.4	23	(X)	71.2
38421 06	Elastic stockings .....	(NA)	(X)	84.0	12	(X)	63.2
38421 07	Surgical corsets .....	(NA)	(X)	19.7	12	(X)	11.1
38421 08	Splints and trusses .....	(NA)	(X)	41.0	17	(X)	24.6
38421 09	Crutches, canes, and other walking assistance devices .....	(NA)	(X)	59.2	19	(X)	49.8
38421 10	Arch supports and other foot appliances .....	(NA)	(X)	123.0	22	(X)	61.9
38421 12	Intraocular lenses .....	(NA)	(X)	( <sup>6</sup> )	(NA)	(X)	( <sup>6</sup> )
38421 13	Other orthopedic and prosthetic appliances .....	(NA)	(X)	399.8	(NA)	(X)	( <sup>6</sup> )
	Surgical dressings:						
38421 22	Bandages, elastic .....	(NA)	(X)	36.0	14	(X)	38.6
38421 23	Bandages, other, including muslin, plaster of paris, etc., excluding self-adhering bandages .....	(NA)	(X)	82.1	14	(X)	97.2
38421 24	Adhesive plaster, medicated and nonmedicated, including self-adhering bandages .....	(NA)	(X)	( <sup>6</sup> )	8	(X)	( <sup>6</sup> )
38421 26	Gauze (absorbent and packing) .....	(NA)	(X)	18.2	9	(X)	17.0
38421 27	Cotton, including cotton balls (sterile and nonsterile) .....	(NA)	(X)	74.7	11	(X)	52.7
38421 29	Other surgical dressings, including sponges, compresses, pads, etc. ....	(NA)	(X)	9793.4	33	(X)	<sup>6</sup> 682.4
38421 31	Disposable surgical drapes, including O/B and O/R packs .....	(NA)	(X)	291.7	18	(X)	280.8
38421 32	Disposable incontinent pads, bedpads, and adult diapers .....	(NA)	(X)	489.1	27	(X)	173.1
38421 37	Sterile surgical sutures .....	(NA)	(X)	192.5	11	(X)	303.5
38421 65	Breathing devices, excluding anesthetic apparatus but including incubators, respirators, resuscitators, inhalators, etc. ....	(NA)	(X)	58.4	31	(X)	191.1
	Patient transport devices:						
38421 83	Wheel chairs .....	(NA)	228.9	159.5	28	<sup>*</sup> 418.8	154.0
38421 85	Other patient transport devices, including stretchers, wheeled chairs, tables, etc. ....	(NA)	(X)	45.8	20	(X)	47.2
	Therapeutic appliances and supplies:						
38421 87	Hydrotherapy equipment, including full body and limb tanks (portable and stationary) .....	(NA)	(X)	48.5	22	(X)	43.8
38421 89	Other therapeutic equipment and supplies, excluding electromedical .....	(NA)	(X)	110.3	23	(X)	70.8
38421 91	Surgical kits .....	(NA)	(X)	176.1	(NA)	(X)	( <sup>6</sup> )
38421 97	Other surgical and orthopedic items not included in above categories .....	(NA)	(X)	<sup>9</sup> 981.4	(NA)	(X)	<sup>6</sup> 7975.2
38421 98	Parts for surgical, orthopedic, prosthetic, and therapeutic appliances and supplies .....	(NA)	(X)	87.3	(NA)	(X)	( <sup>6</sup> 7)
38421 00	Surgical, orthopedic, and prosthetic appliances and supplies, n.s.k. ....	(NA)	(X)	554.9	(NA)	(X)	52.6
38423 --	Personal industrial safety devices .....	(NA)	(X)	964.6	(NA)	(X)	874.2
38423 11	Respiratory protection equipment, including gas masks, abrasive masks, canister masks, etc. ....	(NA)	(X)	312.0	25	(X)	320.8
38423 21	Industrial helmets (hard hats) .....	(NA)	(X)	34.0			
38423 22	Eye and face protection devices, including face shields, hoods, welding helmets and masks (excluding industrial goggles and eye protectors) .....	(NA)	(X)	54.3	26	(X)	76.9
38423 23	Helmets for motorcycles and auto racing .....	(NA)	(X)	( <sup>10</sup> )			
38423 24	Other protective helmets (excluding sporting goods) .....	(NA)	(X)	( <sup>10</sup> )			
38423 51	Protective clothing, except shoes .....	(NA)	(X)	208.5	67	(X)	195.6
38423 61	First aid, snake bite, and burn kits, both household and industrial types .....	(NA)	(X)	43.7	17	(X)	22.3
38423 71	Other personal safety devices .....	(NA)	(X)	<sup>10</sup> 189.2	52	(X)	170.6
38423 00	Personal industrial safety devices, n.s.k. ....	(NA)	(X)	122.9	(NA)	(X)	88.1

See footnotes at end of table.



**Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
<b>3842- --</b>	<b>SURGICAL APPLIANCES AND SUPPLIES—Con.</b>						
38424 -- 38424 00	Electronic hearing aids: Electronic hearing aids, complete units ----- thousands..	(NA)	(S)	243.1	16	*469.5	109.2
38420 -- 38420 00	Surgical appliances and supplies, n.s.k. ----- Surgical appliances and supplies, n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	1 132.4	(NA)	(X)	249.5
38420 02	Surgical appliances and supplies, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	793.8	(NA)	(X)	127.0
		(NA)	(X)	338.6	(NA)	(X)	122.5
<b>3843- --</b>	<b>DENTAL EQUIPMENT AND SUPPLIES</b>						
	<b>Total -----</b>	<b>(NA)</b>	<b>(X)</b>	<b>1 198.5</b>	<b>(NA)</b>	<b>(X)</b>	<b>957.0</b>
38431 --	Dental professional equipment and supplies -----	(NA)	(X)	613.9	(NA)	(X)	567.9
	Professional equipment:						
38431 01	Dental chairs ----- thousands..	(NA)	(S)	37.1	15	*23.8	54.4
38431 02	Instrument delivery systems (dental units) ----- do..	(NA)	(S)	54.2	16	38.7	44.7
38431 03	Dental hand pieces ----- do..	(NA)	(S)	11.7	16	256.0	31.8
38431 12	Dental sterilizers -----	(NA)	(X)	90.3	32	(X)	91.4
38431 13	Other dental professional equipment -----	(NA)	(X)				
	Professional supplies:						
38431 05	Dental hand instruments (forceps and pliers, broaches, cutting instruments, etc.) -----	(NA)	(X)	59.8	21	(X)	40.8
38431 06	Burs, diamond points, abrasive points, wheels, disks, and similar tools for use with dental hand pieces -----	(NA)	(X)	25.7	15	(X)	25.7
38431 07	Dental alloys for amalgams ----- 1,000 troy oz..	(NA)		36.2	11	*2 307.8	42.6
38431 08	Dental impression materials (alginates, silicones, etc.) -----	(NA)	(X)	39.4	12	(X)	26.3
38431 09	Dental cements and other nonmetallic filling materials -----	(NA)	(X)	55.7	12	(X)	30.5
38431 11	Other dental professional supplies -----	(NA)	(X)	184.5	46	(X)	179.8
38431 00	Dental professional equipment and supplies, n.s.k. -----	(NA)	(X)	19.2	(NA)	(X)	-
38432 --	Dental laboratory equipment and supplies -----	(NA)	(X)	372.6	(NA)	(X)	268.8
38432 01	Dental laboratory equipment, including furnaces, casting machines, lathes, benches, polishing units, flasks, blow pipes, presses, etc. -----	(NA)	(X)	32.5	12	(X)	11.6
	Dental laboratory supplies:						
	Dental metals:						
38432 02	Precious ----- 1,000 troy oz..	(NA)		149.1	17	**569.0	139.4
38432 03	Nonprecious ----- do..	(NA)	(S)	60.4	12	(S)	18.1
	Teeth (excluding dentures):						
38432 04	Porcelain ----- mil teeth..	(NA)	(S)	38.0	12	**23.9	13.1
38432 05	Other including resinous and plastics ----- do..	(NA)	(S)		8	*56.1	24.8
38432 06	Denture-base materials -----	(NA)	(X)	9.1	11	(X)	8.3
38432 07	Dental porcelain powders -----	(NA)	(X)	1.1	4	(X)	2.6
38432 08	Other dental laboratory supplies (waxes, gypsums, etc.) -----	(NA)	(X)	47.9	27	(X)	50.8
38432 00	Dental laboratory equipment and supplies, n.s.k. -----	(NA)	(X)	34.6	(NA)	(X)	-
38430 --	Dental equipment and supplies, n.s.k. -----	(NA)	(X)	212.1	(NA)	(X)	120.4
38430 00	Dental equipment and supplies, n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	165.0	(NA)	(X)	93.7
38430 02	Dental equipment and supplies, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	47.0	(NA)	(X)	28.7
<b>3844- --</b>	<b>X-RAY APPARATUS AND TUBES</b>						
	<b>Total -----</b>	<b>(NA)</b>	<b>(X)</b>	<b>111 575.9</b>	<b>(NA)</b>	<b>(X)</b>	<b>111 355.9</b>
38440 --	Irradiation (ionizing radiation) equipment, including X-ray, beta ray, gamma ray, and nuclear (medical, dental, industrial, and scientific):						
38440 00	Irradiation (ionizing radiation) equipment, including X-ray, beta ray, gamma ray, and nuclear (medical, dental, industrial, and scientific) (for additional detail, see Current Industrial Report MA-36R, Electromedical and Irradiation Equipment (Including X-Ray)) -----	(NA)	(X)	1 558.7	56	(X)	121 355.9
38440 02	X-ray apparatus and tubes, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	17.3	(NA)	(X)	(13)
<b>3845- --</b>	<b>ELECTROMEDICAL EQUIPMENT</b>						
	<b>Total -----</b>	<b>(NA)</b>	<b>(X)</b>	<b>113 388.9</b>	<b>(NA)</b>	<b>(X)</b>	<b>112 478.3</b>
38450 --	Electromedical equipment, including diagnostic, therapeutic, and patient monitoring (excluding ionizing radiation equipment):						
38450 00	Electromedical equipment, including diagnostic, therapeutic, and patient monitoring (excluding ionizing radiation equipment) (for additional detail, see Current Industrial Report MA-36R, Electromedical and Irradiation Equipment (Including X-Ray)) -----	(NA)	(X)	3 351.8	115	(X)	142 451.8
38450 02	Electromedical equipment, n.s.k., typically for establishments with less than 20 employees (see note) -----	(NA)	(X)	37.4	(NA)	(X)	128.5

See footnotes at end of table.



**Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
<b>3851- --</b>	<b>OPHTHALMIC GOODS</b>						
	Total .....	(NA)	(X)	1 403.2	(NA)	(X)	1 081.1
38511 --	Ophthalmic fronts and temples .....	(NA)	(X)	87.5	(NA)	(X)	153.7
38511 12	Fronts, finished (with or without decoration):						
38511 14	Gold filled fronts, full rimmed, semirimless, or rimless .....	(NA)	(S)	1.0	7	1.6	11.2
38511 15	Aluminum and other base metal fronts .....	(NA)	(NA)	(1 <sup>9</sup> )	7	(NA)	(1 <sup>9</sup> )
38511 16	Plastics fronts .....	(NA)	(S)	39.3	23	(S)	60.6
38511 16	Combination fronts .....	(NA)	(S)	1513.9	5	(S)	1513.8
38511 18	Temples:						
38511 19	Plastics .....	(NA)	667.5	22.3	20	**35.4	43.6
38511 19	Other .....	(NA)	6	6.1			
38511 00	Ophthalmic fronts and temples, n.s.k. ....	(NA)	(X)	4.9	(NA)	(X)	24.4
38514 --	Glass ophthalmic focus lenses .....	(NA)	(X)	109.2	(NA)	(X)	155.1
38514 31	Single vision lenses (ground and polished and molded blanks) .....	(NA)	(S)	20.0	10	9.2	32.1
38514 41	Multifocal lenses (finished, semifinished, and molded blanks):						
38514 41	Bifocals .....	(NA)	(S)	68.8	10	8.6	83.6
38514 43	Trifocals and double segments .....	(NA)	**6	7.6	7	*1.1	17.3
38514 00	Glass ophthalmic focus lenses, n.s.k. ....	(NA)	(X)	12.8	(NA)	(X)	22.1
38515 --	Plastics ophthalmic focus lenses .....	(NA)	(X)	219.6	(NA)	(X)	115.3
38515 25	Single vision lenses .....	(NA)	**30.2	113.9	11	(S)	53.1
38515 27	Multifocal lenses .....	(NA)	60.4	105.7	10	10.4	59.6
38515 00	Plastics ophthalmic focus lenses, n.s.k. ....	(NA)	(X)	-	(NA)	(X)	2.6
38516 --	Contact lenses .....	(NA)	(X)	448.8	(NA)	(X)	228.8
38516 12	Conventional (hard) .....	(NA)	**7.1	110.2	20	*10.0	32.0
38516 13	Soft .....	(NA)	12.8	315.7	19	(S)	190.6
38516 00	Contact lenses, n.s.k. ....	(NA)	(X)	23.6	(NA)	(X)	6.2
38517 --	Ophthalmic goods except fronts, temples, and lenses .....	(NA)	(X)	242.9	(NA)	(X)	284.4
38517 01	Ophthalmic spectacles and eyeglasses (frames and mountings of all types when sold with corrective lenses inserted, with or without decoration) .....	(NA)	(S)	10.5	10	(S)	13.0
38517 02	Industrial goggles, eye protectors, welding circles and plates, and mountings .....	(NA)	(X)	85.0	16	(X)	54.6
38517 03	Sun or glare glasses and sungoggles, ready-made .....	(NA)	(S)	57.4			
38517 04	Magnifying or reading glasses, ready-made .....	(NA)	(X)	15.2			
38517 05	Nonfocus lenses (sunglass, fashion tinted, magnifying, etc.) for eyewear .....	(NA)	(D)	(D)			
38517 06	Parts for frames and mounting, except fronts and temples .....	(NA)	(X)	(D)			
38517 07	Other ophthalmic goods:				(NA)	(X)	209.3
38517 10	Primarily made for nonprescription sunglasses .....	(NA)	(X)	(D)			
38517 11	Primarily made for other uses:						
38517 11	Made of plastics .....	(NA)	(X)	9.4			
38517 11	Made of other materials .....	(NA)	(X)	(D)			
38517 00	Ophthalmic goods except fronts, temples, and lenses, n.s.k. ....	(NA)	(X)	21.2	(NA)	(X)	7.5
38510 --	Ophthalmic goods, n.s.k. ....	(NA)	(X)	295.2	(NA)	(X)	143.8
38510 00	Ophthalmic goods, n.s.k., typically for establishments with 5 employees or more (see note) .....	(NA)	(X)	215.2	(NA)	(X)	121.5
38510 02	Ophthalmic goods, n.s.k., typically for establishments with less than 5 employees (see note) .....	(NA)	(X)	80.0	(NA)	(X)	22.3
<b>3861- --</b>	<b>PHOTOGRAPHIC EQUIPMENT AND SUPPLIES</b>						
	Total .....	(NA)	(X)	15 582.4	(NA)	(X)	15 078.8
38611 --	Still picture equipment .....	(NA)	(X)	990.0	(NA)	(X)	1 473.3
38611 11	Still cameras:						
38611 21	Hand type cameras (excluding film, bulbs, batteries, etc., in outfits) .....	(NA)	(S)	324.4	6	18 039.5	576.7
38611 32	Process cameras for photoengraving and photolithography (including value of stands and attachments when shipped with process cameras) .....	(NA)	16.0	52.7	8	(S)	55.2
38611 66	Other still cameras, including view and studio, designed primarily for tripod or stand, but excluding photocopying, microfilming, blueprinting, and whiteprinting .....	(NA)	19.5	24.3	14	(S)	39.0
38611 69	Projectors, except rear screen viewers:						
38611 69	Slide film .....	(NA)	**396.9	87.1	9	(S)	90.3
38611 63	Other, including overhead, opaque, strip, etc. ....	(NA)					
38611 64	Rear screen viewers:						
38611 64	Slide film .....	(NA)	(NA)	(1 <sup>9</sup> )	6	154.3	22.9
38611 73	Strip film .....	(NA)	(NA)	(1 <sup>9</sup> )	5	**33.1	10.3
38611 75	Still picture commercial type finishing equipment:						
38611 75	Processing equipment for film .....	(NA)	(S)	133.5	17	12.8	147.0
38611 79	Processing equipment for paper .....	(NA)					
38611 82	Continuous printing machines .....	(NA)					
38611 82	All other processing equipment, including developing machines, and motor-operated print washers and dryers .....	(NA)	(NA)	73.9	10	(S)	175.0
38611 91	Enlargers .....	(NA)	(D)	(1 <sup>9</sup> )	4	78.4	22.9
38611 98	Other still picture equipment, parts, attachments, and accessories, excluding lenses for sale separately and projection screens .....	(NA)	(X)	16245.9	61	(X)	302.7
38611 00	Still picture equipment, n.s.k. ....	(NA)	(X)	48.3	(NA)	(X)	31.2

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
3861--	PHOTOGRAPHIC EQUIPMENT AND SUPPLIES— Con.						
38612 --	Photocopying equipment (includes diffusion transfer, dye transfer, electrostatic, light- and heat-sensitive types, thermographic, diazo, etc.)	(NA)	(NA)	175 180.3	(NA)	(NA)	186 572.8
38612 22	Photocopying equipment except cameras:						
38612 24	Primarily for producing copies 8 1/2 in. x 14 in. or smaller	(NA)					
38612 25	Primarily for producing copies larger than 8 1/2 in. x 14 in.	(NA)	(NA)	(D)	(NA)	(NA)	(D)
38612 27	Photocopying cameras sold separately	(NA)					
38612 00	Parts for photocopying equipment	(NA)					
	Photocopying equipment, n.s.k.	(NA)					
38613 --	Motion picture equipment	(NA)	(X)	180.6	(NA)	(X)	203.2
38613 16	8 mm and 16 mm motion picture equipment:						
38613 17	Cameras, except microfilming cameras (excluding film, bulbs, batteries, etc., in outfits)	(NA)	(S)	87.9	5	(S)	5.6
38613 74	Projectors	(NA)			9	(S)	38.0
	8 mm and 16 mm motion picture parts, attachments, accessories, and other 8 mm and 16 mm motion picture equipment, including sound recording (excluding lenses for sale separately and projection screens)	(NA)	(X)	2.8	10	(S)	(19)
38613 81	35 mm or larger motion picture equipment:						
38613 85	Cameras	(NA)					
38613 89	Projectors	(NA)	.5	6.5	5	(S)	62.0
	35 mm or larger motion picture parts, attachments, accessories, and other 35 mm or larger motion picture equipment, including sound recording and studio equipment (excluding lenses for sale separately and processing equipment)	(NA)	(X)	17.7	12	(Z)	27.1
38613 52	Projection screens (for motion picture and/or still projection)	(NA)	443.2	34.4	7	(S)	1938.9
38613 97	Motion picture processing equipment, all types, including printing machines, developing machines, and drying machines, excluding motion picture type equipment used for still picture work and interchangeable types	(NA)					
38613 00	Motion picture equipment, n.s.k.	(NA)	(X)	24.2	11	35.4	23.9
		(NA)	(X)	7.1	(NA)	(X)	7.7
38614 --	Microfilming, blueprinting, and whiteprinting equipment	(NA)	(X)	381.6	(NA)	(X)	466.0
38614 06	Microfilming equipment (including microfiche):						
38614 03	Cameras, including computer output	(NA)	(S)	80.0	8	*13.1	100.9
38614 04	Microfilm readers, excluding handheld and service type	(NA)	(S)	42.1	10	(S)	49.6
38614 05	Microfilm reader-printers	(NA)	(S)	77.0	5	(S)	68.7
38614 21	Other microfilm equipment	(NA)	(X)	117.1	20	(X)	(20)
	Blueprinting and whiteprinting (direct process type) equipment	(NA)	(X)	52.1	3	(X)	20246.4
38614 00	Microfilming, blueprinting, and whiteprinting equipment, n.s.k.	(NA)	(X)	13.2	(NA)	(X)	.5
38615 --	Photographic sensitized film and plates, silver halide type (except X-ray)	(NA)	(X)	4 693.2	(NA)	(X)	4 154.7
38615 01	Motion picture film, excluding microfilm	(NA)	(D)	(21)			
38615 02	Still picture film, except X-ray:						
	Sheet film, pack film, and long lengths of still picture roll film other than graphic arts film (includes rolls more than 25 ft in length or more than 30 mm in width)	(NA)	(S)	1 357.3	(NA)	(NA)	4 154.7
38615 03	Presensitized printing plates, unexposed	(NA)	(D)	(21)			
38615 04	Microfilm/microfiche	(NA)	(D)	(21)			
38615 05	Other film, plates, and slides	(NA)	(S)	213 168.6			
38615 00	Photographic sensitized film and plates, silver halide type, except X-ray, n.s.k.	(NA)	(X)	167.3			
38616 --	Sensitized photographic paper and cloth, silver halide type:						
38616 00	Sensitized photographic paper and cloth, silver halide type	(NA)	(D)	(17)	11	(D)	(18)
38617 --	Sensitized photographic film, plates, paper, and cloth, other than silver halide type	(NA)	(X)	1 152.3	(NA)	(X)	1 073.4
	Diazo type:						
38617 13	Dry diazo print paper	(NA)	944.2	201.3	18	**1 019.4	172.4
38617 15	Moist diazo print paper	(NA)	(D)	(D)	7	*34.4	10.4
38617 18	Paper reproducible	(NA)	(S)	21.9	9	50.2	24.5
38617 22	Diazo type film, except microfilm/microfiche	(NA)	25.3	45.2	15	22.4	48.7
38617 23	Diazo microfilm/microfiche	(NA)	106.1	.9			
38617 24	All other diazo materials	(NA)	(D)	(D)	(NA)	(S)	153.2
38617 27	Sensitized paper for photocopy processes	(NA)	(D)	(D)	10	(S)	193.4
38617 49	Other types, including sensitized film, plates, paper, and cloth for all other processes (including blueprint types)	(NA)	10 683.8	529.3	26	(S)	452.1
38617 00	Sensitized photographic film, plates, paper, and cloth, other than silver halide type, n.s.k.	(NA)	(X)	99.3	(NA)	(X)	18.7
38618 --	Prepared photographic chemicals	(NA)	(X)	1 287.7	(NA)	(X)	966.8
	Prepared photographic chemicals (developers, fixers, toners, and other chemicals specifically prepared and packaged for use in photography):						
38618 12	Office copy toners	(NA)	(X)	538.2	19	(X)	505.6
38618 13	Other	(NA)	(X)	717.3	33	(X)	453.2
38618 00	Prepared photographic chemicals, n.s.k.	(NA)	(X)	32.2	(NA)	(X)	8.0
38619 --	X-ray film and plates:						
38619 00	X-ray film and plates	(NA)	(D)	(17)	(NA)	(D)	(18)

See footnotes at end of table.



**Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
<b>3861--</b>	<b>PHOTOGRAPHIC EQUIPMENT AND SUPPLIES— Con.</b>						
38610 --	Photographic equipment and supplies, n.s.k. ....	(NA)	(X)	917.8	(NA)	(X)	(NA)
38610 00	Photographic equipment and supplies, n.s.k., typically for establishments with 10 employees or more (see note) .....	(NA)	(X)	568.2	(NA)	(X)	( <sup>18</sup> )
38610 02	Photographic equipment and supplies, n.s.k., typically for establishments with less than 10 employees (see note) .....	(NA)	(X)	349.5	(NA)	(X)	168.5
<b>3873--</b>	<b>WATCHES, CLOCKS, WATCHCASES, AND PARTS</b>						
	<b>Total</b> .....	(NA)	(X)	928.0	(NA)	(X)	1 121.8
38731 --	Watches, watchcases, movements or modules, and watch parts .....	(NA)	(X)	196.8	(NA)	(X)	<sup>22</sup> 586.8
	Watches:						
38731 01	With mechanical movement .....	(NA)	(D)	<sup>(23)</sup> 10	(D)	( <sup>24</sup> )	
38731 02	With quartz analog movement .....	(NA)	(S)	<sup>23</sup> 131.1	(D)		307.9
38731 03	With other movement or electronic module .....	(NA)	-	-			
	Watchcases, movements or modules, and watch parts:						
38731 05	Watch movements or modules, complete .....	(NA)	(D)	<sup>(25)</sup> 1	(D)	( <sup>24</sup> )	
	Watchcases:						
38731 06	Precious metal and precious metal clad .....	(NA)	(S)	19.6	<sup>**</sup> 707.7		18.0
38731 07	Other .....	(NA)	(D)	<sup>(25)</sup> 3	(NA)		47.9
38731 11	Parts for watchcases, excluding bands and crystals .....	(NA)	(X)	-			
38731 13	Other watch parts, excluding bands, crystals, and cases .....	(NA)	(X)	<sup>25</sup> 20.2	(X)		<sup>24</sup> 202.9
38731 00	Watches, n.s.k. ....	(NA)	(X)	25.9	(NA)	(X)	10.1
38732 --	Clocks, timing mechanisms, time switches, clock movements, clock cases, and parts .....	(NA)	(X)	601.2	(NA)	(X)	475.1
	Clocks:						
38732 01	Alarm, excluding clock timers and timing mechanisms .....	(NA)	(S)	50.2	5 677.9		39.1
	Household, excluding alarm:						
38732 02	Wall .....	(NA)	(S)	85.4	19	(S)	64.6
38732 03	All other, including chime and strike, desk, mantel, etc. ....	(NA)	(S)	123.9	17		114.1
38732 09	Other clocks, complete .....	(NA)	1 774.6	47.3	18	(S)	94.7
	Timing mechanisms, not for time piece use, excluding time recording and time stamp machines:						
38732 52	Military timing mechanisms .....	(NA)	(S)	.4	9	(S)	77.8
38732 53	Household timing mechanisms .....	(NA)	(S)	135.0			
38732 54	Commercial timing mechanisms .....	(NA)	(S)	58.8	5	<sup>*2</sup> 023.8	10.1
38732 56	Other timing mechanisms .....	(NA)	(S)	9.8	11	<sup>**3</sup> 310.2	28.5
38732 58	Timers and switch clocks with clock or watch movements or modules having dials or displays for telling time of day .....	(NA)	(S)	4.6	4	(S)	4.3
38732 61	Clock movements and modules, complete .....	(NA)	10 479.9	29.4	8	<sup>*1</sup> 079.2	10.8
38732 66	Clock cases and parts thereof .....	(NA)		6.1	11	(X)	11.0
38732 68	Other clock parts, excluding timing motors .....	(NA)			7	(X)	9.3
38732 00	Clocks, timing mechanisms, time switches, clock movements, clock cases, and parts, n.s.k. ....	(NA)	(X)	50.3	(NA)	(X)	10.7
38730 --	Watches, clocks, and watchcases, n.s.k. ....	(NA)	(X)	130.1	(NA)	(X)	60.0
38730 00	Watches, clocks, and watchcases, n.s.k., typically for establishments with 5 employees or more (see note) .....	(NA)	(X)	92.4	(NA)	(X)	31.5
38730 02	Watches, clocks, and watchcases, n.s.k., typically for establishments with less than 5 employees (see note) .....	(NA)	(X)	37.7	(NA)	(X)	28.5

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoffs used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

<sup>1</sup>Data reported by all producers, not just those with shipments of \$100,000 or more.

<sup>2</sup>For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: \* 10 to 19 percent estimated; \*\* 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

<sup>3</sup>For 1982, data for product codes 38411 72 and 38411 87 included parts. Therefore, these data are not directly comparable to the 1987 data. For 1987, all parts data were collected under product code 38411 99.

<sup>4</sup>For 1982, data for product code 38411 99 were not collected separately but were included with product codes 38411 72, 38411 87, and 38411 97.

<sup>5</sup>For 1982, data for product codes 38421 01, 38421 03, 38421 12, 38421 13, and 38421 91 were not collected separately but were included with product code 38421 97.

<sup>6</sup>For 1982, data for product codes 38421 02 and 38421 04 included parts. Therefore, these data are not directly comparable to the 1987 data. For 1987, all parts data were collected under product code 38421 98.

<sup>7</sup>For 1982, data for product code 38421 98 were not collected separately but were included with product codes 38421 02, 38421 04, and 38421 97.

<sup>8</sup>For 1987, data for product code 38421 12 have been combined with product code 38421 97 to avoid disclosing data for individual companies.

<sup>9</sup>For 1987 and 1982, data for product code 38421 24 have been combined with product code 38421 29 to avoid disclosing data for individual companies.

<sup>10</sup>For 1987, data for product codes 38423 23 and 38423 24 have been combined with product code 38423 71 to avoid disclosing data for individual companies.

<sup>11</sup>SIC industries 3844, X-Ray Apparatus and Tubes, and 3845, Electromedical Equipment, are published as separate industries for the first time in 1987. In 1982, these new industries were both included in industry 3693, X-Ray Apparatus and Tubes.

<sup>12</sup>For 1982, data for product code 38440 00 were published under product code 36931 00.

<sup>13</sup>For 1982, data for product code 38440 02 were not available separately but were included with product code 38450 02.

<sup>14</sup>For 1982, data for 38450 00 have been revised. In 1982, these data were published under product code 36933 00 and 36930 00.

<sup>15</sup>For 1987 and 1982, data for product codes 38511 14 and 38511 16 were combined to avoid disclosing data for individual companies.

<sup>16</sup>For 1987, data for product codes 38611 63, 38611 64, and 38611 91 have been combined with product code 38611 98 to avoid disclosing data for individual companies.

<sup>17</sup>For 1987, data for product codes 38616 00 and 38619 00 have been combined with product code 38612 -- to avoid disclosing data for individual companies. This figure is not comparable to the figure shown for 1982.

<sup>18</sup>For 1982, data for product codes 38616 00, 38619 00, and 38610 00 were combined with product code 38612 -- to avoid disclosing data for individual companies. This figure is not comparable to the figure shown for 1987.

<sup>19</sup>For 1982, data for product code 38613 74 were combined with product code 38613 52 to avoid disclosing data for individual companies.

<sup>20</sup>For 1982, data for product code 38614 05 were combined with product code 38614 21 to avoid disclosing data for individual companies.

<sup>21</sup>For 1987, data for product codes 38615 01, 38615 03, and 38615 04 have been combined to avoid disclosing data for individual companies.

<sup>22</sup>For 1982, data for product code 38731 -- were published under product codes 38734 --, 38736 --, and 38737 --.

<sup>23</sup>For 1987, data for product code 38731 01 are combined with product code 38731 02 to avoid disclosing data for individual companies.

<sup>24</sup>For 1982, data for product codes 38731 01 and 38731 05 were combined with product code 38731 13 to avoid disclosing data for individual companies.

<sup>25</sup>For 1987, data for product codes 38731 05 and 38731 07 have been combined with product code 38731 13 to avoid disclosing data for individual companies.



**Table 3. Materials Consumed by Kind: 1987 and 1982**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982		
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)	
	<b>INDUSTRY 3841, SURGICAL AND MEDICAL INSTRUMENTS</b>					
	Materials, parts, containers, and supplies -----	(X)	2 131.7	(X)	1 085.5	
207431	Cotton linters (net weight) ----- mil lb..	(D)	( <sup>3</sup> )	}	(S)	1.7
221101	Cotton broadwoven fabrics (piece goods) ----- mil lin yd..	(D)	( <sup>3</sup> )		(S)	6.3
220149	Other broadwoven fabrics (piece goods) ----- do..	(S)	2.0		(S)	5.2
229710	Nonwoven fabrics ----- mil sq yd..	(S)	7.1		(S)	55.1
260003	Paper and paperboard products, except paperboard boxes, containers, and corrugated paperboard ----- 1,000 s tons..	(S)	26.9	(S)	42.9	
265001	Paperboard boxes, containers, and corrugated paperboard ----- do..	(S)	69.9	(S)	70.2	
282104	Plastics resins, consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb..	(S)	168.4	(S)	3.1	
289100	Adhesives and sealants ----- do..	(S)	8.5	(S)	64.7	
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets ----- do..	(X)	58.7	(X)	141.0	
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do..	(X)	237.9	(X)	11.7	
320103	Glass and glass products, except photographic and projection lenses and prisms ----- do..	(X)	25.2	(X)	44.4	
331002	Steel mill shapes and forms, except castings and forgings ----- do..	(X)	75.8	(X)	20.2	
335002	Nonferrous metal mill shapes and forms ----- 1,000 s tons..	(S)	27.4	(S)	11.1	
332001	Iron and steel castings ----- do..	(S)	13.0	(S)	4.2	
346200	Iron and steel forgings ----- do..	(S)	26.1	(S)	15.0	
345001	Bolts, nuts, screws, rivets, and screw machine products ----- do..	(X)	51.3	(X)	49.0	
367004	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic-type components ----- do..	(X)	197.3	(X)	86.6	
384001	Surgical and orthopedic supplies (including sutures and hypodermic needles for further manufacture) ----- do..	(X)	183.2	(X)	250.4	
970099	All other materials and components, parts, containers, and supplies consumed ----- do..	(X)	3565.0	(X)	202.7	
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	388.0	(X)		
	<b>INDUSTRY 3842, SURGICAL APPLIANCES AND SUPPLIES</b>					
	Materials, parts, containers, and supplies -----	(X)	2 540.4	(X)	1 880.1	
207431	Cotton linters (net weight) ----- mil lb..	(S)	7.0	(S)	18.5	
221101	Cotton broadwoven fabrics (piece goods) ----- mil lin yd..	(S)	102.9	(S)	133.9	
220149	Other broadwoven fabrics (piece goods) ----- do..	**85.2	64.2	(S)	68.2	
229710	Nonwoven fabrics ----- mil sq yd..	(S)	172.8	**436.6	85.2	
260003	Paper and paperboard products, except paperboard boxes, containers, and corrugated paperboard ----- 1,000 s tons..	(S)	39.0	(S)	58.2	
265001	Paperboard boxes, containers, and corrugated paperboard ----- do..	(S)	107.5	(S)	45.0	
282104	Plastics resins, consumed in the form of granules, pellets, powders, liquids, etc. but excluding sheets, rods, tubes, and shapes ----- mil lb..	(S)	96.4	(S)	43.0	
289100	Adhesives and sealants ----- do..	(S)	48.9	(S)	30.0	
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets ----- do..	(X)	30.8	(X)	24.3	
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do..	(X)	109.1	(X)	84.2	
320103	Glass and glass products, except photographic and projection lenses and prisms ----- do..	(X)	13.0	(X)	8.4	
331002	Steel mill shapes and forms, except castings and forgings ----- do..	(X)	58.0	(X)	31.5	
335002	Nonferrous metal mill shapes and forms ----- 1,000 s tons..	(S)	39.1	(S)	29.1	
332001	Iron and steel castings ----- do..	(S)	36.3	(S)	17.3	
346200	Iron and steel forgings ----- do..	(S)	14.7	(S)	8.4	
345001	Bolts, nuts, screws, rivets, and screw machine products ----- do..	(X)	12.1	(X)	8.6	
367004	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic-type components ----- do..	(X)	78.3	(X)	54.0	
384001	Surgical and orthopedic supplies (including sutures and hypodermic needles for further manufacture) ----- do..	(X)	159.2	(X)	93.1	
970099	All other materials and components, parts, containers, and supplies consumed ----- do..	(X)	582.0	(X)	483.5	
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	769.1	(X)	555.7	
	<b>INDUSTRY 3843, DENTAL EQUIPMENT AND SUPPLIES</b>					
	Materials, parts, containers, and supplies -----	(X)	401.4	(X)	392.2	
260003	Paper and paperboard products, except paperboard boxes, containers, and corrugated paperboard ----- 1,000 s tons..	(S)	3.5	(S)	2.4	
265001	Paperboard boxes, containers, and corrugated paperboard ----- do..	(S)	7.6	(S)	6.6	
282104	Plastics resins, consumed in the form of granules, pellets, powders, liquids, etc. but excluding sheets, rods, tubes, and shapes ----- mil lb..	(S)	3.1	(S)	3.3	
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets ----- do..	(X)	2.2	(X)	2.4	
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do..	(X)	12.3	(X)	7.5	
320103	Glass and glass products, except photographic and projection lenses and prisms ----- do..	(X)	4.9	(X)	3.4	
331002	Steel mill shapes and forms, except castings and forgings ----- do..	(X)	10.7	(X)	20.5	
335002	Nonferrous metal mill shapes and forms ----- 1,000 s tons..	(S)	8.7	(S)	5.5	
333903	Precious metals (gold, platinum, silver, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc. .... 1,000 troy oz..	**546.7	122.9	(S)	137.6	
345001	Bolts, nuts, screws, rivets, and screw machine products ----- do..	(X)	5.8	(X)	3.2	
367004	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic-type components ----- do..	(X)	11.8	(X)	123.6	
970099	All other materials and components, parts, containers, and supplies consumed ----- do..	(X)	99.5	(X)	76.2	
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	108.4	(X)		

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982—Con.**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
	<b>INDUSTRY 3844, X-RAY APPARATUS AND TUBES</b>				
	Materials, parts, containers, and supplies -----	(X)	636.1	(X)	( <sup>4</sup> )
367103	Transmittal, industrial, and special purpose electron tubes, except X-ray ----- millions ..	(D)	(D)	(NA)	(NA)
367408	Semiconductors ----- do ..	(S)	4.2	(NA)	(NA)
367501	Capacitors for electronic circuitry -----	(X)	.8	(NA)	(NA)
367601	Resistors for electronic circuitry -----	(X)	.7	(NA)	(NA)
367800	Connectors for electronic circuitry -----	(X)	3.1	(NA)	(NA)
367900	Electronic components and accessories, n.e.c. -----	(X)	(D)	(NA)	(NA)
335791	Insulated wire and cable (except magnet wire) ----- mil lb ..	(D)	(D)	(NA)	(NA)
282104	Plastics resins in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- do ..	(D)	(D)	(NA)	(NA)
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	20.4	(NA)	(NA)
346901	Metal stampings -----	(X)	25.2	(NA)	(NA)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets -----	(X)	(D)	(NA)	(NA)
345001	Bolts, nuts, screws, washers, rivets, and screw machine products -----	(X)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	223.5	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	107.5	(NA)	(NA)
	<b>INDUSTRY 3845, ELECTROMEDICAL EQUIPMENT</b>				
	Materials, parts, containers, and supplies -----	(X)	990.7	(X)	( <sup>4</sup> )
367103	Transmittal, industrial, and special purpose electron tubes, except X-ray ----- millions ..	(S)	6.2	(NA)	(NA)
367408	Semiconductors ----- do ..	(S)	47.2	(NA)	(NA)
367501	Capacitors for electronic circuitry -----	(X)	16.0	(NA)	(NA)
367601	Resistors for electronic circuitry -----	(X)	10.7	(NA)	(NA)
367800	Connectors for electronic circuitry -----	(X)	19.5	(NA)	(NA)
367900	Electronic components and accessories, n.e.c. -----	(X)	82.5	(NA)	(NA)
335791	Insulated wire and cable (except magnet wire) ----- mil lb ..	*17.8	17.1	(NA)	(NA)
282104	Plastics resins in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- do ..	*11.0	5.7	(NA)	(NA)
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	32.0	(NA)	(NA)
346901	Metal stampings -----	(X)	14.7	(NA)	(NA)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets -----	(X)	4.9	(NA)	(NA)
345001	Bolts, nuts, screws, washers, rivets, and screw machine products -----	(X)	12.5	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	341.6	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	380.1	(NA)	(NA)
	<b>INDUSTRY 3851, OPHTHALMIC GOODS</b>				
	Materials, parts, containers, and supplies -----	(X)	378.2	(X)	305.5
322941	Lens blanks, optical and ophthalmic ----- millions ..	*78.7	80.7	*53.7	74.6
382710	Lenses and prisms for optical instruments, and sighting and fire control equipment ----- do ..	(S)	1.4	(S)	16.7
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	17.5	(X)	29.3
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb ..	**38.6	40.4	**7.3	20.2
333903	Precious metals, all forms, including ingot, sheet, strip, solder, plating, electrodes, etc. ----- 1,000 troy oz ..	(S)	.5	(D)	( <sup>5</sup> )
265001	Paperboard containers, boxes, and corrugated paperboard .. 1,000 s tons ..	(S)	8.3	(S)	7.3
970099	All other materials and components, parts, containers, and supplies -----	(X)	143.1	(X)	<sup>5</sup> 76.9
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	86.3	(X)	79.4
	<b>INDUSTRY 3861, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES</b>				
	Materials, parts, containers, and supplies -----	(X)	5 029.9	(X)	4 997.1
	Mill shapes and forms, except castings and forgings:				
331001	Carbon steel ----- 1,000 s tons ..	(S)	10.4	16.8	16.1
331020	Alloy steel, except stainless ----- do ..	(S)	7.5	(S)	8.0
	Stainless steel:				
331033	Sheet and strip ----- 1,000 s tons ..	(S)	5.4	(S)	10.0
331050	All other stainless steel mill shapes and forms ----- do ..	(S)	7.2	(S)	7.8
335105	Copper and copper-base alloy ----- mil lb ..	(S)	9.6	(S)	9.7
335001	Aluminum and aluminum-base alloy ----- do ..	(S)	46.2	*34.1	59.4
335609	Nonferrous metal mill shapes and forms, except copper and aluminum ----- do ..	(S)	8.8	(NA)	( <sup>6</sup> )
336005	Aluminum and aluminum-base alloy castings ----- do ..	(S)	36.1	(S)	44.8
346901	Metal stampings ----- 1,000 s tons ..	(S)	65.5	(S)	82.3
356601	Speed changers, gears, and industrial high-speed drives -----	(X)	13.2	(X)	5.4
	Fractional horsepower electric motors (less than 1 hp):				
362110	Timing motors, synchronous and subsynchronous ----- millions ..	(S)	27.3	(S)	28.7
362115	Other fractional horsepower motors, excluding timing motors ----- do ..	**1 935.6	25.6	(S)	31.0
364101	Electric lamp bulbs -----	(X)	16.3	(X)	12.2
367408	Semiconductors -----	(X)	47.0	(X)	31.4
367501	Capacitors for electronic circuitry -----	(X)	17.1	(X)	11.1

See footnotes at end of table.



Table 3. Materials Consumed by Kind: 1987 and 1982—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
	<b>INDUSTRY 3861, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES—Con.</b>				
367700	Coils, transformers, reactors, and chokes for electronic circuitry -----	(X)	43.2	(X)	12.7
367800	Connectors for electronic circuitry -----	(X)	13.6	(X)	7.8
260004	Paper and paperboard products, except paperboard boxes, containers, corrugated paperboard, and photographic base papers -----	(X)	164.1	(X)	103.8
262104	Photographic base papers -----	(X)	132.4	(X)	88.0
265001	Paperboard boxes, containers, and corrugated cardboard -----	(X)	145.6	(X)	77.7
281903	Inorganic chemicals, n.e.c. (except silver nitrate and prepared photographic chemicals) ----- mil oz ..	(X)	92.8	(X)	71.2
281997	Silver nitrate -----	57.8	269.6	59.1	458.5
286902	Synthetic organic chemicals, except prepared photographic chemicals -----	(X)	57.0	(X)	103.2
289945	Gelatin, photographic grade -----	(X)	26.3	(X)	24.1
386180	Prepared photographic chemicals -----	(X)	158.1	(X)	64.6
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb ..	173.5	83.2	(S)	97.8
308100	Unsupported plastics film and sheet for photographic, mimeographic, X-ray use, etc. -----	(X)	197.7	(X)	168.0
308200	Unsupported plastics rods, shapes, tubes, and profiles -----	(X)	29.9	(X)	65.6
308005	Other plastics products -----	(X)	70.0	(X)	58.4
345001	Bolts, nuts, screws, washers, rivets, and screw machine products -----	(X)	( <sup>7</sup> )	(X)	24.6
382730	Photographic and projection lenses and prisms -----	(X)	154.0	(X)	17.2
386101	Light sensitive film and papers -----	(X)	113.0	(X)	269.5
386104	Photographic equipment and supplies (shutters, range finders, light meters, etc.), excluding film and chemicals -----	(X)	27.1	(X)	7.2
970099	All other materials and components, parts, containers, and supplies consumed -----	(X)	<sup>72</sup> 308.3	(X)	<sup>62</sup> 523.5
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	600.8	(X)	395.8
	<b>INDUSTRY 3873, WATCHES, CLOCKS, WATCHCASES, AND PARTS</b>				
	Materials, parts, containers, and supplies -----	(X)	426.4	(X)	632.5
333903	Precious metals, all forms (including ingot, sheet, strip, solder, plating electrodes etc.) ----- 1,000 troy oz ..	(D)	( <sup>8</sup> )	<sup>*</sup> 24.3	9.0
	Watchcases:				
387310	Domestic (made in the United States):				
387374	Precious metal and precious metal clad ----- millions ..	.5	27.2	<sup>9</sup> 1.4 (NA)	<sup>9</sup> 38.9 <sup>10</sup> 28.0
	Other ----- do ..				
387312	Imported (not made in the United States):				
387313	Precious metal and precious metal clad ----- millions ..	(S)	17.1	( <sup>9</sup> ) (NA)	( <sup>9</sup> ) ( <sup>10</sup> )
	Other ----- do ..				
	Watch movements or modules:				
387314	Domestic (made in the United States):				
387315	With balance wheel and hairspring ----- millions ..	-	-	(NA)	( <sup>11</sup> )
	Without balance wheel and hairspring ----- do ..	(S)	26.7	(NA)	( <sup>11</sup> )
	Imported (not made in the United States):				
387375	With balance wheel and hairspring ----- millions ..	(S)	10.4	21.0	223.1
387317	Without balance wheel and hairspring ----- do ..	<sup>*</sup> 2.0	12.0		
	Watch parts (including dials, hands, displays, numerals, etc.), except movements and face crystals:				
387318	Domestic (made in the United States) -----	(X)	22.2	(X)	51.8
387319	Imported (not made in the United States) -----	(X)	11.3		
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb ..	<sup>*</sup> 8.9	8.5	(S)	5.3
308006	Fabricated plastics products, except gaskets (including face crystals) -----	(X)	6.2	(X)	( <sup>12</sup> )
369201	Batteries, primary -----	(X)	2.6	(X)	( <sup>12</sup> )
265001	Paperboard containers, boxes, and corrugated paperboard -----	(X)	8.9	(X)	5.2
345001	Bolts, nuts, screws, rivets, washers, and screw machine products -----	(X)	4.0	(X)	8.2
970099	All other materials and components, parts, containers, and supplies -----	(X)	<sup>8</sup> 167.7	(D)	<sup>11</sup> <sup>12</sup> 194.4
971000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	101.6	(X)	68.6

<sup>1</sup>For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: \* 10 to 19 percent estimated; \*\* 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

<sup>2</sup>Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

<sup>3</sup>For 1987, data for material codes 207431 and 221101 have been combined with material code 970099 to avoid disclosing data for individual companies.

<sup>4</sup>Industry definition is new for 1987; therefore, 1982 materials consumed data are not available. In 1982, the materials consumed data were published under old SIC industry 3693, X-Ray, Electromedical, and Electrotherapeutic Apparatus.

<sup>5</sup>For 1982, data for material code 333903 were combined with material code 970099 to avoid disclosing data for individual companies.

<sup>6</sup>For 1982, data for material code 335609 were not collected separately but were included with material code 970099.

<sup>7</sup>For 1987, data for material code 345001 have been combined with material code 970099 to avoid disclosing data for individual companies.

<sup>8</sup>For 1987, data for material code 333903 have been combined with material code 970099 to avoid disclosing data for individual companies.

<sup>9</sup>For 1982, data for material code 387312 were not collected separately but were included with material code 387310.

<sup>10</sup>For 1982, data for material code 387313 were not collected separately but were included with material code 387374.

<sup>11</sup>For 1982, data for material codes 387314 and 387315 were not collected separately but were included with material code 970099.

<sup>12</sup>For 1982, data for material codes 308006 and 369201 were combined with material code 970099 to avoid disclosing data for individual companies.





# APPENDIX

## Scope and Coverage and Explanation of Terms

### GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

### SCOPE AND COVERAGE

#### Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

#### Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

### EXPLANATION OF TERMS

**Number of establishments and companies**—A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

**All employees**—Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

**Production workers**—Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., power-plant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

**Other employees**—Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and



servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

**Payroll**—Includes the gross earnings for the “employees” defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees’ Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production-worker hours**—Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of materials**—Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific materials consumed (table 3)**—In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers’ records. Establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as “not specified by kind” (n.s.k.).

**Value of shipments and other receipts**—Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all

miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of “all other costs” (including company overhead and profit).

**Shipments or production of individual products (table 2)**—In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

**Value added by manufacture**—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value



added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for new plant and equipment**—Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

**End-of-year inventories**—Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method.

Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

**Specialization and coverage ratios**—An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

**Specialization ratio**—Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

**Coverage ratio**—Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.

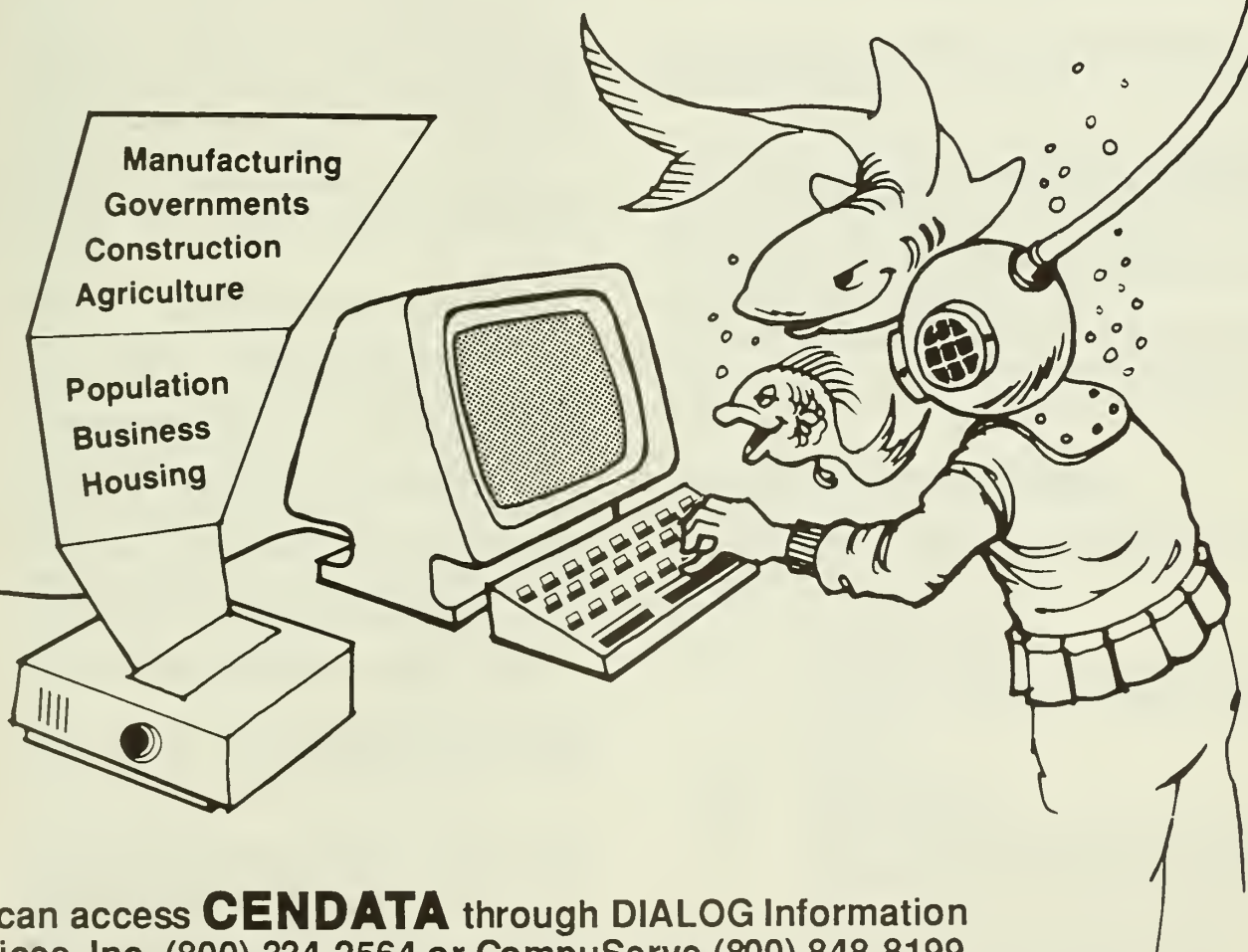


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